10. Micaela

Program Name: Micaela.java **Input File: micaela.dat**

Micaela is fascinated with writing encrypted messages and has come up with one she thinks will do the trick. See if you can figure out a program to decipher her message.

For example, she wants to send the word "BLUE" as a part of a message to her friend, Ayden, and decides to use two long nonsense words, both of which contain the word "BLUE", with those four letters in that order, somewhere inside each word, but with many other letters in between. She designs each word so that the word "BLUE" is the longest possible sequence of common letters among both words.

The two code words she sends are **DEBQGLBFUE** and **BMANOPLRSTUEVE**. There are other sequences that are common, but are not as long. For example, **BUE** and **LUE** are both common, but aren't the longest ones. She is also careful to make sure that there are no two "different" common words that are of the longest length, for obvious reasons; it would be quite confusing to the one receiving the coded message!

To mark the end of a thought in the message, she includes two encoded sequences that have nothing in common. In that case, for testing purposes, she just says "NONE" when that happens.

Input: A data file of several pairs of encoded character sequences, in all caps, with each pair on a separate line.

Output: The word that is the longest sequence of characters common to both encoded sequences, or the word "NONE" if there is no matching sequence.

Sample Input:

```
DEBQGLBFUE BMANOPLRSTUEVE
URPWOEGJSDLFJA RARKQENMED
QGWFEDRGQWFD ULIKJOULIKJYUKLIJ
```

Sample Output:

```
BLUE
RED
NONE
```